

Jablonowski et al.

IN THE CLAIMS:

1. (amended) An optical WDM transmission system using Raman amplification, said system comprising:

a length of optical fiber including a core region;

an optical transmitter for introducing a lightwave information signal into the optical fiber, the lightwave information signal including separate signal channels operating at at least three separate wavelengths, wavelength division multiplexed (WMD) to form the lightwave information signal;

an optical pump source for introducing optical energy into the core region of said optical fiber, whereby the optical pump energy interacts with the lightwave information signal to produce Raman amplification of said lightwave information signal, wherein the invention is characterized in that the optical fiber has the following properties:

low water peak at 1385 nm less than 0.4 dB/km;

zero dispersion wavelength (ZDW) less than or equal to 1355 nm, with only one ZDW across the entire transmission band from 1310 to 1625 nm; and

chromatic dispersion (D) greater than 1 ps/nm-km at 1375 nm and less than 10 ps/nm-k-1565 nm between about 7.5 and about 9.5 ps/nm-km at 1550nm; and  
an effective area in the range of 50 to 65 μm<sup>2</sup> at 1550 nm.

2. (original) The system as defined in claim 1 wherein the optical fiber comprises an inner, high index core region and a surrounding, lower index trench region, a ring region surrounding said lower index trench region, a depressed cladding region and an outer cladding region formed to surround said ring region.

3. (original) The system as defined in claim 1 wherein the optical fiber has a low water peak loss at 1385 nm of less than 0.35 dB/km.

4. (original) The system as defined in claim 3 wherein the optical fiber comprises an inner, high index core region and a surrounding, lower index trench region, a ring region surrounding said lower index trench region, a depressed cladding region and an outer cladding region formed to surround said ring region.

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**5. - 17. *cancelled*****18. (*currently amended*) An optical fiber characterized by:**

low water peak at 1385 nm less than 0.4 dB/km;

zero dispersion wavelength (ZDW) less than or equal to 1355 nm, with only one ZDW across the entire transmission band from 1310 to 1625 nm; and chromatic dispersion (D) greater than 1 ps/nm-km at 1375 nm and less than 10 ps/nm-km between about 7.5 and about 9.5 ps/nm-km at 1550nm; and an effective area in the range of 50 to 65 μm<sup>2</sup> at 1550 nm.

**19. *cancelled*****20. (*original*) The optical fiber as defined by claim 18 wherein the fiber comprises an inner, high index core region and a surrounding, lower index trench region, a ring region surrounding said lower index trench region, a depressed cladding region and an outer cladding region formed to surround said ring region.****21. (*original*) The optical fiber as defined by claim 18 with a low water peak at 1385 n less than 0.35 dB/km.****22. (*original*) The optical fiber as defined by claim 21 wherein the fiber comprises an inner, high index core region and a surrounding, lower index trench region, a ring region surrounding said lower index trench region, a depressed cladding region and an outer cladding region formed to surround said ring region.**